Unique Identification (UID)

Capturing business intelligence through technology

Lessons Learned/Recognized Best Practices

Generic Lessons Learned

- **Keep supplier flow-down SIMPLE so your supplier has the opportunity to utilize the same internal process they use/would use for other Primes or suppliers requiring IUID**

- **It is the Prime Contractor's responsibility to ensure the required IUID data is flowed to the DoD IUID Registry. In the case of a drop-ship of parts from a sub-contractor directly to the government, the sub-contractor may be required to pass along associated data elements or update DoD's IUID Registry.**

Generic Lessons Learned, cont.

- **Some suppliers are not responding to a IUID RFP because *"... we are still waiting for DCMA to review/approve our negotiated plans."* Not acceptable....**

  - **DCMA negotiates implementation plans, SPIs, MOAs with its Primes**
  - **A sub-contractor's DoD DCMA negotiated implementation plan, advance agreement, MOA, etc.... is not a DoD approved plan between the <u>sub-contractor</u> and its <u>Prime</u>**

  - **Prime contractors who are pursuing DCMA negotiated plans, SPIs, MOAs, etc. should include their sub-contractors in its development**
  - **Sub-contractors who are developing implementation plans, etc. should include their Primes in its development**

- **DCMA negotiated IUID plans, SPIs, Block Changes, MOAs are not a requirement**

Streamlined Options – Quick Samples

- **Nameplates**
  - **Option 1: Add IUID to existing plate**
  - **Option 2: Add IUID to supplemental plate near existing plate**
- **Direct Mark**
  - **Be consistent with existing marking methods**
  - **No need for design/structures drawing preparation or approval**
- **Use process spec to fabricate plate and locate marking**

Supply Chain Management
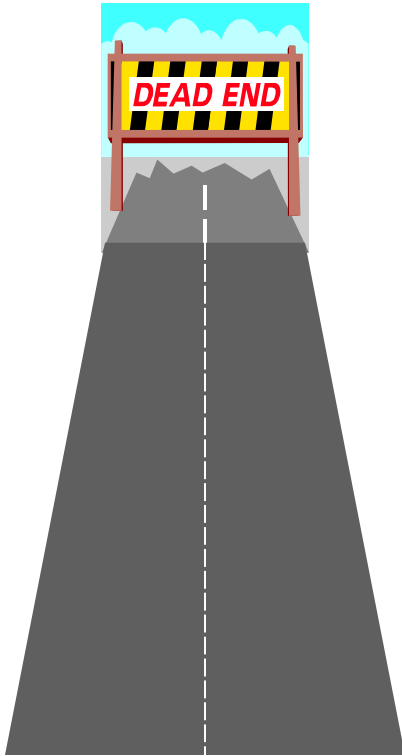
Implementing RFID and/or IUID without a **Supply Chain Management System** is a Dead End.

… No Savings

But you would have met DoD requirements

The trick is to find a way to implement RFID and/or IUID with a friendly SCM System.

…We are using COLTS

Shipping (Planned)

Warehouse

COLTS

COLTS creates a pick list

Warehouse person picks parts

COLTS

Pick List

Shipping

Handheld

COLTS creates DD1149's for each shipment

Parts are brought to shipping and either IUID scanned or RFID Scanned as a group

Receiving Planned

Portal RFID Tag reader

IUID or RFID handheld scan

Handheld

Receiving

Warehouse

COLTS

Warehouse person places received parts in inventory or maintenance

SPAWARS Extremely High Frequency Satellite Program

<u>**Inventory Savings Using RFID and IUID**</u>

Naval Extremely High Frequency Satellite Program (NESP)					
UID/RFID Cost Analysis					
Consulting Team: PEO C4I Consulting					
In Cooperation with SPAWAR System Center Code 2622, Barry Jones					
Without RFID and IUID:					
Yearly Total Costs/Hours for Five Years					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Cost	$109,833.33	$109,833.33	$109,833.33	$109,833.33	$109,833.33	**$549,166.67**
Hours	2622	2622	2622	2622	2622	
With RFID and IUID:					
Yearly Total Costs/Hours for Five Years					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Costs	$38,565.73	$23,035.73	$23,035.73	$23,035.73	$23,035.73	**$130,708.67**
Hours	450	450	450	450	450	
Avoidance:					
Total Cost Avoidance					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Costs	$71,267.60	$86,797.60	$86,797.60	$86,797.60	$86,797.60	**$418,458.00**
Hours	2,172	2,172	2,172	2,172	2,172	

F-16
APG-68 PROGRAMMABLE SIGNAL PROCESSOR MEMORY CARDS

BUILD TO PRINT

- **$14K - BUY**
- **$ 3K - REPAIR**
- **500 HR MTBF**
- **SEVERE DMS PROBLEM**

PERFORMANCE

- **$ 4K - BUY**
- **$ 0 - REPAIR**
- **40,000 HR MTBF***
- **NO DMS PROBLEM**
- **DOUBLE MEMORY**

Investment = $5.5M
Projected LCC Savings = $54.8M
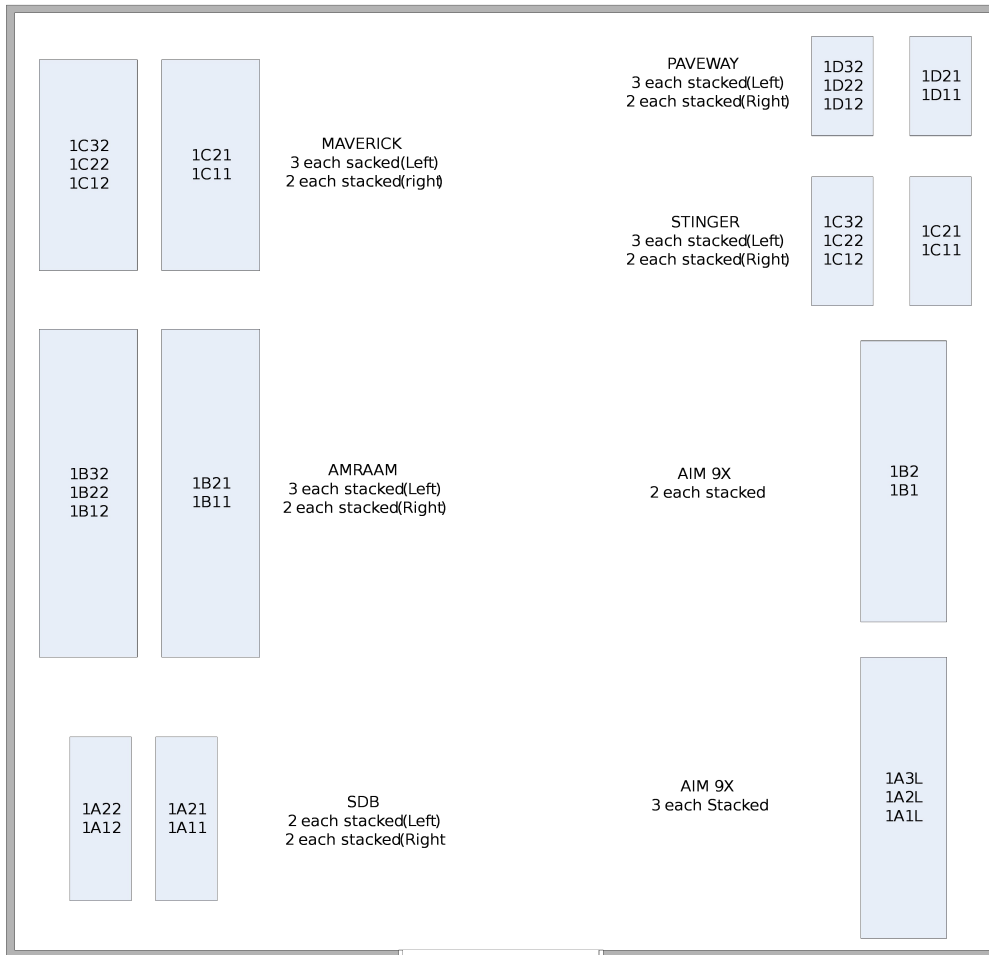**ROI = 10.0**

*Estimated

FMS AIM-120 Inventory

Figure 2
Simulated Bunker Layout

FMS AIM-120 Inventory

- **Demo 2A: Baseline Current Inventory Process**
  - **Location: Raytheon Missile Systems, Tucson**
  - **Simulated Bunker, with 29 missile containers (Stinger, AMRAAM, AIM-9X, Paveway, Maverick, and SDB)**
  - **6 Personnel, Fork Truck**
  - **Timed Staging, Inventory, Re-Stow**
    - **Total Bunker 114 minutes**
    - **Average 236 seconds per contain**

- **Demo 2B: UID Inventory**
  - **Scan UID container seal which crossed to co UIDs.**
  - **Timed complete bunker inventory, start to finish**
    - **3 minutes, 50 seconds**
    - **Average 8 seconds per container**
- **Will apply results to global universe of E-EUM missi**
  - **(>35,000) by country**

NDIA – Engine Manufacturer
Why MRI With Automated Data Capture?

- **100% Reduction – Quality Errors**
- **100% Reduction - Quality Escapes**
- **100% Reduction - Quality Notifications**
- **90% Reduction – Labor (cycle time)**
- **40 - 50% Reduction – Product Development Span Time**
- **30% Inventory Reduction**

Benefits of MRI and Automated Data Capture

- **Significantly reduces risk of quality failure associated with identification escapes**
- **Eliminates legibility issues**
- **An enabler to a paperless system**
- **Improves speed and accuracy of data transfer**
- **No data transcript errors**
- **Internationally recognized**
- **Has the ABILITY to………**
  - **Improve parts traceability**
  - **Reduce internal processing procedures**
  - **Capture accurate 'As Built' data**
  - **Check 'Should Build' data**
  - **Reduce Replenishment costs**
  - **Generate electronic log books**

An MRI Journey - Sample

The Need for Improvement

Cost to **FIX** an error

Cost to **MAKE** an error

2000 x 1

COST

2000
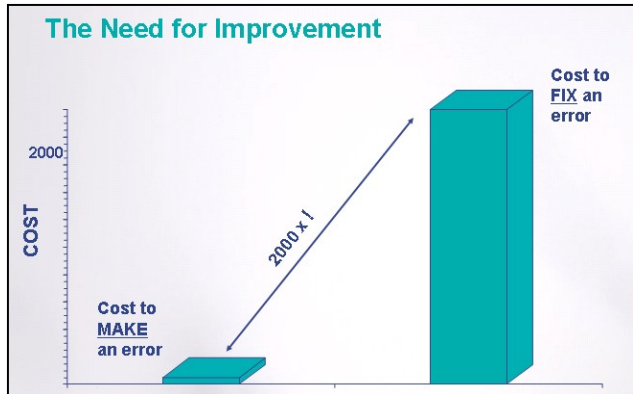
Direct Part Marking – Data Collection
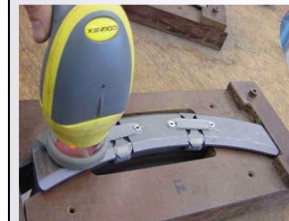
Scanning a Fan Blade

Scanning a Blade Set

View of the Codes through the Scanner

RAD 1601
TAN P247
AXL P66.5
TIP 111.2
ST1 65.0

11223

BEFORE

Process Capability

I Chart of Scan Time Taken to Scan Complete Trent 500 Fan Blade Set
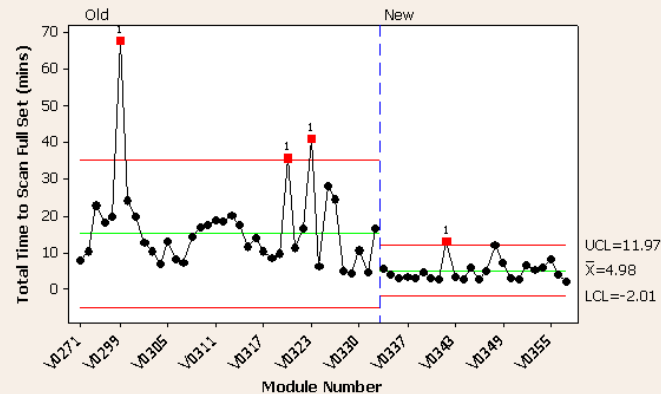
Old   New

Total Time to Scan Full Set (mins)

UCL=11.97
X̄=4.98
LCL=-2.01

Module Number

AFTER

An MRI Journey - Sample

Paper Cell - Manual Transcription, Identification Errors, Inventory Costs

Solution - MRI With Automated Data Capture & Exchange

Transformation Began with BarCode 39 in 2000

- **40% Cycle Time Savings**

- **30% Inventory Reduction**

- **50% Reduction in Defects**

- **Initiated Transition to 2D Data Matrix**

Inventory Carrying Cost Improvements

Cycle Time Impacts

Six Sigma Improvements

Opportunities vs Defects

Provided Courtesy of Lockheed Martin Clearwater Florida
Bob Strawbridge
May 2006

An MRI Journey - Sample

Automated Transcription of Part Identification

Eliminated Part Identification Non-conformities

- **Standardized Marking Method**
- **Eliminated 115 M characters manually recorded**
- **Eliminated 382 K transcription errors**
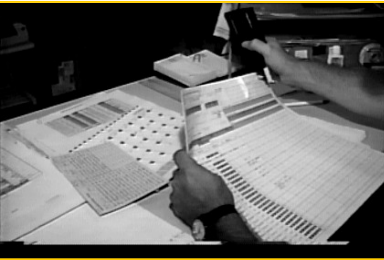
BEFORE

Number of Parts: 870
Number of QN: 160

Quality Notification Reduction

AFTER

Number of Parts: 46
Number of QN: 25

■ Wrong marking method	■ Marking illegible	■ Marking out of limit
■ Operator manipulation	■ Wrong marking location	■ Inspector stamp illegible /
■ Wrong Identification	■ Missing identification	■ Others (Vendor, Telesis)
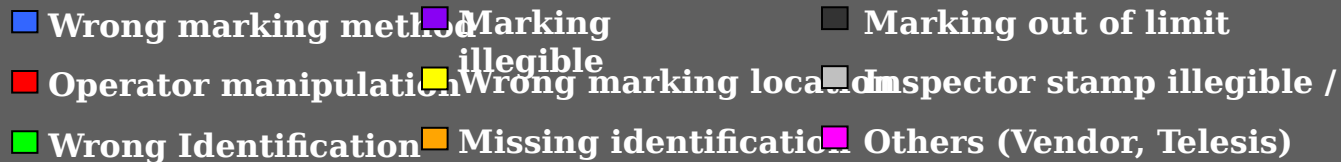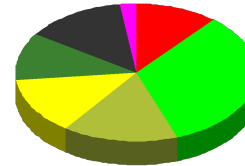
Provided Courtesy of Pratt & Whitney: Andy Jay Sept 2006

<u>ELITE – PLCS – DEX Development (Completed)</u>

    Application of ISO0303AP239 and follow on Phases of the Electronic Logistics Information Trading Exchange (ELITE) to include UID data interface to the Registry & additional Navy, CCAD data exchange along with the current Sikorsky and Army DA2410 System current XML data exchange. Includes funding to NAVAIR and Redstone for organic support. **Production Follow-on Projects with NAVAIR and ARMY AV IMMC**

    POC: Charlie Lord, UID PMO

<u>Small Arms Marking at Anniston</u>

    End to end integration of UID marking and AIS/AIT to Anniston Army Depot M-9 and M-240 product lines to evaluate economics of service based approach.

    POC: Mr. Mike Friedman PMSoldier

<u>Standard Missile Marking and Serialized Item Management using UID as Enabler</u>

    Integrate UID technology into Standard Missile's Advanced maintenance Information System and perform real time SIM using UID technology

    POC: Mr. Craig MacDougall, NSWC Corona

<u>Gage UID Pilot Project</u>

    Integrate USMC's Gage PM initiative to apply UII to all gages with NSWC Coronas Advanced Management Information System for support gage SIM

    POC: Mr. Craig MacDougall, NSWC Corona

<u>APU UID on PBL at Cherry Point</u>

    NAVAIR will pursue applying UID technology to APUs that go through NADEP Cherry Point on a PBL with Honeywell

    POC is Mike Breckon, NAVAIR

<u>Navy Cross Program Study for UID Implementation at Depots</u>

    Study the process of launching UID in the Navy and Marine Corps with the Depot's acting as single process initiators with the Program Offices they support

    POC: Mike Breckon, NAVAIR

Direct Parts Marking Guide

Assemble, review and collate all existing data on applying direct part marks to various components and develop a standard direct parts marking guide for Gov't and Industry use.

POC: Chris Sautter, UAH

CCAD UID Pilots for H-60 and H-47 (hyd shops, T-700)

CCAD to pilot applying UID technology to H-47 and H-60 components during overhaul process

POC: Chris Sautter, UAH

DMLSS UID System ECP

Defense Medical Logistics Support System to develop the MHS UID policy and develop an implementation plan and implement engineering change proposals to modify DMLSS to enable the UII.

POC: Mr. Jon Sherman

USMC 7 Ton Crane

Initiate UID on a land vehicle during overhaul at Maintenance Center, Albany

POC: James Gagnon

USMC Legacy/Depot Parts Marking Pilots

USMC to mark fielded legacy system & a selected pilot system at the Barstow MB

POC: Steve Fraile

Redstone UID Enhancement to TF160 MRC System

Integrates the Army Avn's new web based SNT program with UID – Registry interface

TF160 is the lead Army Aviation Unit for this effort

POC: Jimmy Cox

UID Integration Project

Integration of data from existing legacy systems, including the Air Force Serialized Database, into the Air Force Knowledge Service (AFKS) & GCSS

Automatic update of UID information to the DOD Registry.

POC: Mr. Eddie Chase

TACOM Comprehensive

Multiple Tasks in support of UID marking and data use. Abrams parts marking at recap General Dynamics.

POC: Dr. Raj Iyer

Navy IPO FMS Missile Tracking Project

Leverage Unique Identification (UID) asset information and generate shipping documentation and asset verification for missiles and other assets being sold, shipped and inventoried under Navy's Foreign Military Sales.

POC: Cdr Bill Hayes

Navy Maintenance Figure of Merit (MFOM)

Integrate UID key with Tool developed by DON to calculate a material condition readiness value for equipment, systems, tasks, missions or the ship

POC: Mr. Dave Grefe

STAMP – Hospital UID Project

To validate & implement DoD UID technology for civilian hospital applications

POC: Dr. In K. Mun MIT Health Research Initiative

TACOM – USMC Condition Based Maintenance

Evaluate use of IUID to tag conditioned based maintenance for components on the USMC LAV sense and respond Support system (Camp Pendleton)

POC: Mr. Bob Appleton

Site UID

Development/Integration of Site and Real Property UID Registries

POC: Mr. Craig Adams, ODUSD(I&E) Business Transformation